

In the claims:

Delete claims 1-26, beginning in column 19 at line 30 and extending through column 22.

Add the following claims:

27. A process for delivering an angiogenic growth factor to the heart of a patient, including:

penetrating an element of a delivery device into heart tissue; and

delivering an angiogenic growth factor to the tissue through the element.

28. A process for treating the heart of a patient, including:

providing a catheter with a tissue penetrating element disposed at a distal end thereof;

inserting at least the distal end of the catheter into a chamber of the heart;

causing the penetrating element, while in the chamber of heart, to penetrate heart tissue;

and

delivering an angiogenic agent from the penetrating element to surrounding cardiac tissue.

29. An apparatus for locally modifying electrical action within the heart, comprising:

a biocompatible, electrically inactive device including an element for penetrating cardiac tissue to secure the device at a designated site in a heart, to modify electrical action in the cardiac tissue at the designated site; and

a catheter releaseably coupled to the device to allow use of the catheter to deliver the device to the designated site, and further to allow a withdrawal of the catheter after securing the device.

30. An apparatus for delivering a pharmacological agent to the heart, including:

a catheter body having a proximal end, a distal end, and adapted to convey a pharmacological agent toward the distal end; and

a tissue penetrating structure releaseably coupled to the distal end of the catheter body and adapted to deliver the pharmacological agent from the catheter body into heart tissue.

31. A process for delivering an angiogenic agent to the heart, including:
providing a device having an element adapted to penetrate cardiac tissue;
inserting the device into a heart, and causing the element to penetrate tissue inside the
heart; and
delivering an angiogenic agent through the penetrated element into surrounding tissue.

32. The process of claim 27 wherein:
said penetrating the element of the delivery device positions the element inside a chamber
of the heart.

33. The process of claim 27 wherein:
the delivery device incorporates a controlled release matrix, and said delivering the
angiogenic growth factor includes providing the angiogenic growth factor to the controlled
release matrix.

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34. The process of claim 27 wherein:
said delivering the angiogenic growth factor comprises providing a controlled release of
the angiogenic growth factor over an extended period of time.

35. The process of claim 27 wherein:
at least part of the element is coated with a controlled release matrix, and said delivering
the angiogenic growth factor comprises providing the angiogenic growth factor to the controlled
release matrix.

36. The process of claim 27 wherein:
the delivery device comprises a catheter adapted to support the element at its distal end,
and said delivering the angiogenic growth factor includes delivering the angiogenic growth factor
through a lumen in the catheter.

37. The process of claim 36 further including:
before said penetrating the element, inserting the distal end of the catheter into a chamber
of the heart, and using the catheter to position the element at a site selected for said penetrating.

38. The process of claim 28 wherein:

said delivering the angiogenic agent comprises delivering the angiogenic agent through a lumen in the catheter.

39. The process of claim 28 further including:

after inserting at least the distal end of the catheter into a chamber of the heart, and before causing the tissue penetrating element to penetrate heart tissue, using the catheter to position the tissue penetrating element at a site selected for penetration.

40. The process of claim 28 further including:

after delivering the angiogenic agent, removing the catheter to leave the penetrating element implanted in the heart tissue.

41. The process of claim 28 wherein:

said delivering the angiogenic agent comprises using a controlled release mechanism associated with at least one of the penetrating element and the catheter.

42. The process of claim 28 wherein:

said delivering the angiogenic agent includes providing a controlled release of the angiogenic agent over an extended period of time.

43. The apparatus of claim 29 further including:

a controlled release matrix disposed along the device for supplying a pharmacological agent to the cardiac tissue.

44. The apparatus of claim 29 further including:

an electrode at a distal end of the catheter for sensing electrical action in the cardiac tissue, to facilitate determining the designated site in the heart for penetrating cardiac tissue.

45. The apparatus of claim 29 further including:

a fluid passage through the device, open to an exterior of the device at the penetrating element and at a proximal portion of the device opposite the penetrating element, wherein the

catheter incorporates a lumen fluid coupled to the fluid passage at the proximal portion of the device.

46. The apparatus of claim 45 wherein:

the device, at least over an outermost portion thereof that includes an exposed surface, is formed of an electrically conductive material.

47. The apparatus of claim 30 further including:

a controlled release matrix disposed along the tissue penetrating structure for supplying the pharmacological agent to the heart tissue.

48. The apparatus of claim 30 further including:

an electrode at the distal end of the catheter body for sensing electrical action in the heart tissue to facilitate locating a site for penetrating the heart tissue with the tissue penetrating structure.

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49. The apparatus of claim 30 further including:

a fluid passage through the tissue penetrating structure, open to an exterior of the tissue penetrating structure at opposite proximal and distal portions thereof.

50. The apparatus of claim 49 wherein:

the catheter body incorporates a lumen fluid coupled to the fluid passage to facilitate conveying the pharmacological agent from the lumen to the heart tissue via the fluid passage.

51. The process of claim 31 wherein:

said device incorporates a controlled release matrix, and said delivering the angiogenic agent through the penetrated element comprises providing the angiogenic agent to the controlled release matrix.

52. The process of claim 31 wherein:

said delivering the angiogenic agent includes providing a controlled release of the angiogenic agent over an extended period of time.